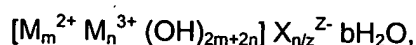


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Claims

1. A process for the production of a cellulosic product which comprises adding to an aqueous cellulosic suspension a clay having 3R<sub>2</sub> stacking, the clay being added in an amount of at least about 0.01% by weight, calculated as dry clay on a dry cellulosic suspension.
2. The process according to claim 1, wherein the clay is cationic.
3. The process according to claim 1, wherein the clay comprises layers and interlayers, said interlayers comprising anions, and said layers comprising divalent and trivalent metal atoms in such a ratio that the overall charge of said layers are cationic.
4. The process according to claim 3, wherein the divalent metal atom (M<sup>2+</sup>) is magnesium and the trivalent metal ion (M<sup>3+</sup>) is aluminium.
5. The process according to claim 3, wherein the interlayers comprise anions selected from the group consisting of NO<sub>3</sub><sup>-</sup>, OH<sup>-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, CO<sub>3</sub><sup>2-</sup>, SO<sub>4</sub><sup>2-</sup>, SiO<sub>3</sub><sup>2-</sup>, CrO<sub>4</sub><sup>2-</sup>, BO<sub>3</sub><sup>2-</sup>, MnO<sub>4</sub><sup>-</sup>, HGaO<sub>3</sub><sup>2-</sup>, HVO<sub>4</sub><sup>-</sup>, ClO<sub>4</sub><sup>-</sup>, pillaring or intercalating anions, carboxylates, sulphonates and mixtures thereof.
6. The process according to claim 5, wherein the interlayers comprise hydroxide, carbonate or mixtures thereof.
7. The process according to claim 1, wherein the clay is characterised by the general formula:



- wherein m and n, independently of each other, are integers having a value such that m/n is in the range of from 1 up to 10; b is an integer having a value in the range of from 0 to 10; X<sub>nz</sub><sup>z-</sup> is an anion where z is an integer from 1 to 10; M<sup>2+</sup> is a divalent metal atom selected from the group consisting of Be, Mg, Cu, Ni, Co, Zn, Fe, Mn, Cd, Ca and mixtures thereof; and M<sup>3+</sup> is a trivalent metal atom selected from the group consisting of Al, Ga, Ni, Co, Fe, Mn, Cr, V, Ti, In and mixtures thereof

8. The process according to claim 1, wherein the clay is selected from the group consisting of hydrotalcite, manasseite, pyroaurite, sjögrenite, stichtite, barbertonite, takovite, reevesite, desautelsite, motukoreaite, wermlandite, meixnerite, coalingite, chloromagalumite, carrboydite, honessite, woodwardite, iowaite, hydrohonessite, 5 mountkeithite, and mixtures thereof.

9. A process for the production of paper which comprises  
(i) providing an aqueous cellulosic suspension;  
(ii) adding to the suspension a clay having  $3R_2$  stacking, the clay being added in an 10 amount of at least about 0.01% by weight, calculated as dry clay on dry cellulosic suspension; and  
(iii) dewatering the obtained suspension.

10. The process according to claim 9, wherein the clay is cationic. 15

11. The process according to claim 9, wherein the clay is hydrotalcite.

12. The process according to claim 9, wherein it further comprises adding to the suspension one or more drainage and retention aids. 20

13. The process according to claim 12, wherein the drainage and retention aids comprise cationic polymer and anionic material.

14. The process according to claim 12, wherein the drainage and retention aids 25 comprise cationic polymer and anionic silica-based particles.

15. The process according to claim 12, wherein the drainage and retention aids comprise cationic polymer and anionic clay of smectite type.

30 16. The process according to claim 12, wherein the drainage and retention aids comprise cationic and anionic organic polymers.

17. The process according to claim 13, wherein the cationic polymer is cationic starch or cationic acrylamide-based polymer. 35

18. The process according to claim 14, wherein the cationic polymer is cationic starch or cationic acrylamide-based polymer.

19. The process according to claim 16, wherein the cationic polymer contains one or more aromatic groups.
- 5 20. The process according to claim 9, wherein it further comprises adding to the suspension one or more sizing agents.
21. A process for the production of paper which comprises
- (i) providing an aqueous cellulosic suspension;
- 10 (ii) adding to the suspension a cationic clay in an amount of at least about 0.01% by weight, calculated as dry clay on dry cellulosic suspension;
- (iii) adding to the suspension one or more drainage and retention aids comprising at least one cationic polymer, the cationic polymer being added in an amount of at least about 0.001% by weight, based on dry cellulosic suspension,
- 15 (iv) dewatering the obtained suspension.
22. The process according to claim 21, wherein the clay has 3R<sub>2</sub> stacking.
23. The process according to claim 21, wherein the drainage and retention aids
- 20 comprise cationic polymer and anionic silica-based particles.
24. The process according to claim 23, wherein the silica-based particles have a specific surface area above 100 m<sup>2</sup>/g
- 25 25. The process according to claim 23, wherein the silica-based particles are present in a sol having an S-value in the range of from 8 to 50%,
26. The process according to claim 21, wherein the drainage and retention aids comprise cationic polymer and anionic clay of smectite type.
- 30 27. The process according to claim 21, wherein the drainage and retention aids comprise cationic and anionic organic polymers.
28. The process according to claim 21, wherein the cationic polymer is cationic
- 35 starch or cationic acrylamide-based polymer.

29. The process according to claim 23, wherein the cationic polymer is cationic starch or cationic acrylamide-based polymer.
30. The process according to claim 21, wherein the cationic polymer contains one or  
5 more aromatic groups.
31. The process according to claim 21, wherein it further comprises adding to the suspension one or more sizing agents.
- 10 32. The process according to claim 21, wherein the cellulosic suspension contains filler.
33. A process for the production of paper which comprises  
(i) providing an aqueous suspension containing cellulosic fibres, and optional filler;;  
15 (ii) adding to the suspension a cationic clay having  $3R_2$  stacking, the clay being added in an amount of at least about 0.01% by weight, calculated as dry clay on dry suspension;  
(iii) adding to the suspension at least one cationic polymer in an amount of at least about 0.001% by weight, based on dry suspension;  
(iv) adding to the suspension anionic silica-based particles in an amount of at least about  
20 0.001% by weight, based on dry suspension; and  
(v) dewatering the obtained suspension.
34. The process according to claim 33, wherein it further comprises adding to the suspension one or more sizing agents.  
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35. A process for the production of pulp which comprises  
(i) providing an aqueous cellulosic suspension;  
(i) adding to the suspension a clay having  $3R_2$  stacking, the clay being added in an amount of at least about 0.01% by weight, calculated as dry clay on dry cellulosic  
30 suspension; and  
(iii) dewatering the obtained suspension.
36. The process according to claim 35, wherein the clay is cationic.
- 35 37. The process according to claim 35, wherein the clay is hydrotalcite.
38. A cellulosic product comprising clay having  $3R_2$  stacking.

- 39. The product according to claim 38, wherein the product is paper.
- 40. The product according to claim 38, wherein the product is pulp.